Listing and Amendments to the Claims

This listing of claims will replace the claims that were published in the PCT Application and the International Preliminary Examination Report:

1. (currently amended) An Orthogonal Frequency Division Multiplexing (OFDM) receiver that is adapted to receive OFDM signals, the OFDM receiver comprising:

a buffer ~~(68)~~ that stores data corresponding to the OFDM signals;

a processor that is adapted to receive data from the buffer ~~(68)~~, perform computations on the data and return data to the buffer ~~(68)~~;

an equalizer module ~~(78)~~ adapted to receive data from the buffer ~~(68)~~ and equalize the data; and

a receiver controller ~~(62)~~ that controls access to the buffer ~~(68)~~ by the processor and controls the transfer of data from the buffer ~~(68)~~ to the equalizer module.

2. (currently amended) The OFDM receiver of claim 1, comprising:

a pilot frame tracking module ~~(86)~~ that is adapted to move an FFT window location by changing an index pointer to the buffer ~~(68)~~.

3. (currently amended) The OFDM receiver of claim 1, comprising:

a pilot carrier tracking module ~~(74)~~ adapted to provide pilot carrier tracking data to the buffer ~~(68)~~; and

a fine carrier estimation module ~~(72)~~ that is adapted to access the buffer ~~(68)~~ to obtain the pilot carrier tracking data.

4. (currently amended) The OFDM receiver of claim 1, comprising:

an equalizer tap initialization module ~~(80)~~ that is adapted to exchange data with the buffer ~~(68)~~; and

a least mean squares (LMS) adaptation engine ~~(76)~~ that is adapted to provide input to the equalizer tap initialization module ~~(80)~~.

5. (currently amended) The OFDM receiver of claim 4, wherein the equalizer tap initialization module ~~(80)~~ is adapted to reuse output from the LMS adaptation engine to perform a recursive division algorithm.

6. (currently amended) The OFDM receiver of claim 1, comprising:

a least mean squares (LMS) adaptation engine ~~(76)~~ that is adapted to provide input to the equalizer module ~~(78)~~; and

wherein the equalizer module ~~(78)~~ is adapted to reuse the data provided by the LMS adaptation engine ~~(76)~~ to compute a least mean squares tap update value.

7. (currently amended) The OFDM receiver of claim 1, comprising:

a fine frame synchronization module ~~(82)~~ adapted to exchange data with the buffer ~~(68)~~; and

a least mean squares (LMS) adaptation engine ~~(76)~~ that is adapted to provide input to the fine frame synchronization module ~~(82)~~.

8. (currently amended) The OFDM receiver of claim 7, wherein the fine frame synchronization module ~~(82)~~ is adapted to reuse output from the LMS adaptation engine ~~(76)~~ to perform a recursive division algorithm.

9. (currently amended) The OFDM receiver of claim 1, comprising:

a coarse carrier estimation and frame synchronization module ~~(70)~~ that is adapted to exchange data with the buffer ~~(68)~~; and

wherein the receiver controller ~~(62)~~ is adapted to allow the coarse carrier estimation and frame synchronization module ~~(70)~~ to access the buffer ~~(68)~~ responsive to receipt of at least a portion of a preamble by the OFDM receiver.

10. (currently amended) The OFDM receiver of claim 1, comprising:

an equalizer tap initialization module ~~(80)~~ that is adapted to exchange data with the buffer ~~(68)~~;

a fine carrier estimation module ~~(72)~~ that is adapted to exchange data with the buffer ~~(68)~~;

a fine frame synchronization module ~~(82)~~ that is adapted to exchange data with the buffer ~~(68)~~; and

wherein the receiver controller ~~(62)~~ is adapted to allow the equalizer tap initialization module ~~(80)~~, the fine carrier estimation module ~~(72)~~ and the fine frame synchronization module ~~(82)~~ to access the buffer ~~(68)~~ responsive to receipt of at least a portion of a preamble by the OFDM receiver.

11. (currently amended) The OFDM receiver of claim 1, comprising:

a pilot carrier tracking module ~~(74)~~ that is adapted to receive data from the equalizer module ~~(78)~~;

a pilot frame tracking module ~~(86)~~ that is adapted to provide data to the buffer ~~(68)~~; and

wherein the receiver controller ~~(62)~~ is adapted to activate the equalizer module ~~(78)~~, the pilot carrier tracking module ~~(74)~~ and the pilot frame tracking module ~~(86)~~ responsive to the receipt of at least a portion of an OFDM signal by the OFDM receiver.

12. (currently amended) The OFDM receiver of claim 1, wherein the receiver controller ~~(62)~~ is a state machine.

13. (currently amended) A device, comprising:

a buffer ~~(68)~~ that stores data corresponding to signals;

a processor that is adapted to receive data from the buffer ~~(68)~~, perform computations on the data and return data to the buffer ~~(68)~~;

an equalizer module ~~(78)~~ adapted to receive data from the buffer ~~(68)~~ and equalize the data; and

a device controller ~~(62)~~ that controls access to the buffer ~~(68)~~ by the processor and controls the transfer of data from the buffer ~~(68)~~ to the equalizer module ~~(78)~~.

14. (currently amended) The device of claim 13, comprising:

a pilot frame tracking module ~~(86)~~ that is adapted to move an FFT window location by changing an index pointer to the buffer ~~(68)~~.

15. (currently amended) The device of claim 13, comprising:

a pilot carrier tracking module ~~(74)~~ adapted to provide pilot carrier tracking data to the buffer ~~(68)~~; and

a fine carrier estimation module ~~(72)~~ that is adapted to access the buffer ~~(68)~~ to obtain the pilot carrier tracking data.

16. (currently amended) The device of claim 13, comprising:

an equalizer tap initialization module ~~(80)~~ that is adapted to exchange data with the buffer ~~(68)~~; and

a least mean squares (LMS) adaptation engine ~~(76)~~ that is adapted to provide input to the equalizer tap initialization module ~~(80)~~.

17. (currently amended) The device of claim 13, comprising:

a least mean squares (LMS) adaptation engine ~~(76)~~ that is adapted to provide input to the equalizer module ~~(78)~~; and

wherein the equalizer module ~~(78)~~ is adapted to reuse the data provided by the LMS adaptation engine ~~(76)~~ to compute a least mean squares tap update value.

18. (currently amended) The device of claim 13, comprising:

a coarse carrier estimation and frame synchronization module ~~(70)~~ that is adapted to exchange data with the buffer ~~(68)~~; and

wherein the device controller ~~(62)~~ is adapted to allow the coarse carrier estimation and frame synchronization module ~~(70)~~ to access the buffer ~~(68)~~ responsive to receipt of at least a portion of a preamble signal.

19. (currently amended) The device of claim 13, comprising:

an equalizer tap initialization module ~~(80)~~ that is adapted to exchange data with the buffer ~~(68)~~;

a fine carrier estimation module ~~(72)~~ that is adapted to exchange data with the buffer ~~(68)~~;

a fine frame synchronization module ~~(82)~~ that is adapted to exchange data with the buffer ~~(68)~~; and

wherein the device controller ~~(62)~~ is adapted to allow the equalizer tap initialization module ~~(80)~~, the fine carrier estimation module ~~(72)~~ and the fine frame synchronization module ~~(82)~~ to access the buffer ~~(68)~~ responsive to receipt of at least a portion of a preamble signal.

20. (currently amended) The device of claim 1, comprising:

a pilot carrier tracking module ~~(74)~~ that is adapted to receive data from the equalizer module ~~(78)~~;

a pilot frame tracking module ~~(86)~~ that is adapted to provide data to the buffer ~~(68)~~; and

wherein the device controller ~~(62)~~ is adapted to activate the equalizer module ~~(78)~~, the pilot carrier tracking module ~~(74)~~ and the pilot frame tracking module ~~(86)~~ responsive to the receipt of a signal by the device.